Mobility in the Next War*

Colonel Clifford J. Heflin

THE UNITED STATES, having been the deciding force in two world wars by virtue of its industrial might, must face the realization that the next war may commence, without warning, with a paralyzing blow directed at its vital industries, transportation, and fuel supplies. In any plan to meet this eventuality, the Air Force must consider two factors:

(1) The force necessary to neutralize the exterior force or maintain the strategic situation, whenever and wherever it might strike, and,

(2) The striking of a retaliatory blow, with the time element being constantly in mind.

With respect to the force necessary to maintain the strategic situation, the British Navy presents itself as a good historical example, from which several conclusions can be drawn.

The British Empire owes its foundation and continued existence to trade, dependent mainly upon sea power for its security. This sea power was itself dependent upon a strong merchant fleet, a powerful navy and a chain of strategic naval bases and refueling stations in all parts of the world. On these bases fleets could pivot or concentrate the "coherent dispersal about a strategic center" of which Corbett speaks in *The Principles of Maritime Strategy*. There is no sea or ocean across which British trade routes passed in which she did not possess naval bases. The range of her sea power was world-wide. Wherever the center of gravity shifted,

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fleets could sail to look after her interests, as bases for their reception and maintenance were available in all quarters of the globe, increasing their mobility.

Applying this same strategy to the Air Force, there can be visualized a system of primary, secondary, and transit bases, fully equipped and manned, enabling forces to concentrate, pivot or disperse, meeting any threat of aggression. Given dispersed targets, against which there could be no hope of a quick knock-out blow, and given, too, the threat of counter-attack from widely separated bases against one's own vulnerable areas, it is unlikely that any nation will wisely embark upon war. Our national aim, therefore, should be to deploy our Air Power so as to prevent war by threat of action, rather than allowing a traditionally tardy policy of seeking to reply to blows already delivered and received.

Concentric rings of strategic air bases could threaten almost any possible enemy. Our blows could converge on a common center, while those of the enemy would of necessity be absorbed by scattered points upon the circumference. The principle of concentration would be achieved as well by making the enemy disperse his forces as by our own actual physical concentration in time and space. The classic example, in this regard, is Lee's use of Jackson in the Shenandoah valley campaign of 1862. Against the overwhelming Federal forces advancing upon Richmond, the Confederate capital, the obvious defense was the concentration of all available Confederate forces in that vicinity. Instead, Jackson's bold handling of his detached force in the Shenandoah valley created such alarm in Washington, the Federal capital, that the forces closing on Richmond were dispersed or recalled to meet the created apparent threat, and Richmond was saved. Similarly, our dispersed

bases, aided by the mobility of Air Power, could create the necessary threat which would force an enemy to scatter his own forces. If such a widespread potential danger to the enemy could be achieved and kept before his mind even prior to the beginning of any war, actual hostilities in armed conflict should not be necessary.

The main responsibility for defense and attack will rest with the Air Force in the future, to an even greater degree than in the past or during the present. The essence of the successful use of Air Power in either defense or international enforcement action is mobility. Our Air Force must be capable of offensive or defensive action in any part of the world upon short notice. It is a common fallacy to assume that air forces are inherently mobile. They are governed in their own sphere by the same limitations as naval forces. They must have fully equipped bases in all areas where they are called upon to operate.

Their mobility goes up in inverse ratio to the supplies they have to take with them. Experience in the last war has shown that a very complex ground organization has to be set up before modern aircraft can be operated, and this is not likely to prove less true in the future. Such an organization cannot be improvised, nor will future wars allow the breathing space to which the United States has become accustomed in the past. Experience with planning for overseas forces in the last war shows the difficulty of moving modern aircraft without a previous base organization into the required area. In spite of the supposed mobility of air forces, it actually proved easier to operate naval vessels far from their nearest base than it did to operate aircraft within that same area. The conclusion, therefore, must be drawn that Air Power, like sea power before it, depends, for its effectiveness, upon the possession of a chain of prop-

erly equipped bases. Without them its mobility is largely illusory, and without this mobility the structure of defense is not sound.

The necessary requirements for a base system would seem to be:

(1) The provision of facilities for rapid deployment of forces in any desired direction.

(2) The provision of adequate and immediate logistic support.

(3) Sufficient strength and depth to restrain enemy forces from penetration of vital areas.

(4) The provision of sufficient base sites in any given area to permit adequate dispersion and alternate location.

(5) A capability for rapid expansion.

Because of peacetime economy, always a problem to the armed forces, the Air Force should develop the best system of employment of fighting units and their logistic support, consistent with budgetary allowances, keeping in mind the lesson which democratic peoples so often must be taught, namely, that potential power and actual power are not at all the same, and must be kept in rational balance.

In major de Seversky's own presentation of the case for Air Power, the outstanding feature which characterizes him above all other students of that subject is an insistence on the vital importance of large radii of action for bombing aircraft, and the possibility of even increasing ranges to distances far beyond comparison with any heretofore available. He emancipates the air force of the future from any concern with extensive ground organization which Douhet

conceded, and from all the island stepping stones of the Arctic routes in the Atlantic and Pacific, to which Mitchell attached such importance. He prophesies the early realization of non-stop flight around the world, using terms similar to those which Mitchell had used 17 years before. In his book, *Victory Through Air Power*, de Seversky says that, "within five years at the outside, the ultimate round-the-world range of 25,000 miles becomes inevitable." He may prove to be almost correct; but in order that he may have his prediction materialize, technical progress in airplane design and improvement in power-plant economy, to say nothing of navigation problems and the sonic barrier, will have to be much more rapid during the present and immediate future than at any time in the past twenty years. For an airplane to circle the world without stopping, at the present time, it would necessarily have substantially more than 75 percent of the total load in the form of fuel, leaving less than 25 percent of the gross weight for structure, engines, crew, military equipment and anything else which must be carried.

The idea of operating from home bases, without the burden of establishing and maintaining advanced and intermediate bases, would be welcomed by every Air Force officer, if it could be realized without paying too prohibitive a price. From the inherent characteristics of the airplane as developed during the last 40 years, however, it appears probable that the price of such a method of operation will continue to be extremely high in the measurable future. Even if aircraft had attained the range necessary to launch bombing attacks from a distance of 6000 to 8000 miles, it would be likely to remain much more economical in materiel, and therefore more efficient, to operate from nearer bases wherever they could be obtained, with fuel supplies secured locally, or brought in

by tanker at only a fraction of the cost in manpower and materiel, should they be brought in by air.

Even if one disagrees with de Seversky's statement that the air forces can operate from their home grounds without concern for establishment and maintenance of advanced and intermediate bases, there is every reason to hold that the flight elements should not be concerned with the ground organization, except as bases for their reception and for logistic support, enhancing mobility.

After a discussion of the base system, and its importance in maintaining the strategic situation, logically the next question should concern the kind of units which could be designed to operate in and out of these bases.

If we consider a fighting unit as such and only as such, we note that the composition of the tactical organizations is based upon tables of organization and equipment which are further broken down into flight echelons and ground echelons, with flight echelons moving in their own unit aircraft, and the ground sections transporting by ground means. It is well to state here that there are some plans now in existence whereby ground echelons will move by air, also. The two main drawbacks to such proposals are shown in the amount of air lift that must be made available versus that which is in being and, secondly, the time factor involved in preparing for, embarking, and debarking from, such an air movement.

Based on *AAF Staff Officers' Manual 115-65-1*, a typical example of such a unit is a Bombardment Squadron, Very Heavy, Table of Organization and Equipment 1-167R. There are 74 officers and 254 enlisted men, or an aggregate of 328 within this organization. The flight echelon is composed of ten crews of six officers

and five enlisted men each, manning ten aircraft, limited initially in mobility only by the range of their aircraft. This, then, is the fighting unit, and the remainder of the personnel, the ground echelon, composes the supporting elements of that combat organization. The mobility of the squadron would not be hindered too much if it involved only the movement of ground personnel, but 294,613 pounds of equipment is on hand to be transported. It should be borne in mind that this is only one squadron, and that a Very Heavy Group would have a total of 1,261,172 pounds of ancillary equipment.

Excluding this excess baggage, and considering the air echelon only, would result in freedom of movement, giving the air commander complete flexibility by being able to add to or subtract from the required effort and mobility, in order to concentrate upon or disperse the fighting units wherever the center of gravity dictated. Blows could converge upon a common objective, while those of the enemy would of a necessity be dispersed against the scattered bases around the circumference.

Having divorced the air echelon completely from the ground components, and being free from any responsibility other than the mission of fighting, we can now devote all energy to the effective use and employment of modern Air Power by development and application of the most profitable tactics and techniques. The conclusions from this type of reasoning can only resolve themselves into one big factor, true mobility.

The British, in planning their postwar air force, realized the need for a system of bases strategically located throughout the British Commonwealth. They foresaw also the requirement for keeping the fighting elements mobile by the separation of the air

echelon and the ground echelon. These points are demonstrated in their Planned Flying and Planned Servicing System, now in effect. Under this plan operations, administration and maintenance are divided into three wings, under a station commander. The operational units upon arrival at a base submit an estimate of their needs to the technical wing, which, in turn, arranges for the logistical support and plans the work load. Such a system permits the required freedom of movement to the operational units, wherever the situation dictates, without the dependency upon the ground elements, since the technical staff at the planning level is cognizant of the situation and has alerted or manned the necessary bases prior to their actual arrival.

The basic principle of planned flying and planned servicing can be described in general terms as the marshalling of the available resources of the Royal Air Force in order to produce the maximum possible useful effort. The amount and general pattern of effort required, and the degree of operational opportunity, are forecast by the air staffs of Air Ministry and the commands, as well as circumstances permit, and can be used as a basis for the establishment of aircraft, manpower, airfield and supply requirements.

The British, in the use of their system, specifically hold that Planned Flying and Planned Servicing is a joint matter for Air Staff, Technical and Administrative branches. Its success, they hold, is entirely dependent upon wholehearted cooperation between the personnel of these branches at all levels. The Air Staff must, however, take a leading part, since they are the consumers, and must be expected to voice their desires and anticipated achievements.

The concept applying correctly to one nation is not necessarily applicable to another; this will depend a great deal upon a number

of variables, together with the situation in general. However, logic can properly be applied toward a conclusion whenever it is noted that any nation or number of great nations, known to be at least normally canny in their military ideas to the point of recent successes, seem to be in accord with respect to any one particular school of thought along a specific line of application. With this in mind, it should be profitable to examine the known ideas of such countries as Russia and Germany, the former at present a great military power, the latter now fallen but previously accepted by world standards as a most formidable foe to the entire world, a power with a proud, methodical, and precisely successful military machine.

Russia, it will be seen, has currently in effect a system of logistic support which provides for the desired quick movement and general characteristic of mobility for the tactical elements, in that she completely separates the logistic and operational functions, down to and including all levels. In addition, as a matter of information on the same subject, her command structure of logistic elements differs from those of the United States, in that each department head receives orders from his opposite number at the next higher echelon. Thus, a signal officer at base level would obtain instructions, technical and otherwise, from the signal officer at next-higher level. It must be admitted that such a practice goes even further than the action recommended in this paper, if, indeed, such action proves to be the desired, logical step.

Up to this point, then, it would appear that two of the three currently great powers are in accord upon this one idea, namely, the method of logistic support to be provided to the operational elements of a fighting machine in the air. The United States, it would also seem, has not been in agreement with this.

As an additional factor which should be given a certain amount of weight, consideration should be given the German Air Force system of logistic support. As previously mentioned, concession must be given to the historical fact that Germany was defeated, and must not necessarily, by virtue of that fact alone, be given credit for possessing an efficient method of waging successful air war. Further investigation into this field, however, presents an entirely different picture. The foremost military minds of the world, almost without exception, have admitted and still maintain that the German Reich must be given credit for unusually sound thinking, along with methodical and precise planning, in all matters concerning the application of the principles of war. Indeed, such German military men as Clausewitz, Bismark, Schlieffen, Moltke, Ludendorff and Frederick the Great have been given to posterity as the foremost exponents of the art of warfare. Weight, then, may be properly given to their considered opinions as practices of the German military machine, although their relation to that organization does not in itself establish the wisdom of those opinions and practices.

Here, too, it is found that logistic support was given to the German Air Force through a system of organization and bases entirely disconnected, with respect to command channels, from the tactical units. Two separate chains were constantly in operation; the first, a system of tactical organizations with emphasis upon rapid employment and mobility, and the second, a supporting system of logistic support, capable of handling the entire support picture, and giving emphasis to the degree of mobility and effect attainable by the fighting units. It is to be noted that when the German machine actually crumpled, the logistic machinery was still in efficient operation, and that the failure of supplies at various points of the huge

pipeline was occasioned, in every case known by the writer, by the failure in the actual production of supplies, or in some instances, by the failure of the logistically supporting machinery outside the jurisdiction of the German Air Force. Despite this failure, the average American combat pilot seems to have wondered, on various occasions, as to the apparently uncanny ability of the German Air Force, especially intercepting fighters, to move, upon a few moment's [*sic*] notice, entire fighting organizations from one section of Western Europe to another, or even from Eastern to Western Europe, with no apparent need for rehabilitation at the new point, nor any shown necessity for removal back to the original base upon termination of that current phase of the air battle. If the basic system of logistic support used in the German Air Force is taken into consideration, these performances seem much simpler.

The United States could easily adopt a similar system, by the establishment of areas to be controlled by a Regional Service Command; all bases within such areas could be assigned this headquarters, as it could be located in the numbered Air Force headquarters and could have command jurisdiction over all the service elements. The service commander could, by adding or subtracting specialists and equipment from the service group, enable that organization to maintain any type of aircraft. This seems important in view of the differentiation which must be made between jet engines, reciprocating engines, and the various types of airframe and airfoil construction. The service commander could, by moving these logistical resources from one base to another, increase the effort of some bases while decreasing that of others, according to the dictates of military experience, and with the very apparent gain of economy of force, flexibility, and overall efficiency.

This proposed service commander, being closely allied in actuality with the air force commander, would properly be expected to foresee the needs of logistic support, and could make plans accordingly, without interfering with or detracting from the mobility of the fighting elements. In like manner, the air force commander could mass or disperse his forces, without the added worry of bringing into play the various ground echelons.

The base itself would be operated by the service group, having the mission of logistic support of the fighting unit. This would unquestionably place the tactical commander in the position of having more of the comforts of home without shouldering the responsibilities of ownership. While subordinating in no way one commander to the other, it would, rather, place each in the position of being supreme in his own field, yet understanding the other's mission, and creating an atmosphere of cooperation and mutual understanding.

Before we proceed to another point in this dissertation, a few words may well be said concerning the question of morale. Much has been said of the detrimental effect to the morale of personnel within the logistic elements adjacent to the tactical organizations. In this regard, no morale problem can logically be blamed upon any one element or practice; secondly, there is room for reasonable belief that any such lack of good morale may have been due, indeed, to the fact that the service organization, by its very integration into the operational unit, lost the right to any identity, organizationally speaking, with the function it was performing. Finally, if such an argument is to be allowed against the separation of logistic and operational elements, certainly one cannot place such weight upon the value of morale as to allow the air arm to be deprived of the greatest single factor justifying its existence, namely, mobility.

The value of the supplying and repairing force is quite important; equally important is the morale of the airplane builder and the miner who produces the metal for them; can it be seriously suggested that they, too, should become a part of the fighting unit in the theater?

The day of the knight flying about in his trusty airplane, with his scarf waving in the breeze, has passed into history. It has given way to the use of mass personnel, all performing duties peculiar to their talents. It is inconceivable that this new idea will not become even more pronounced, as advances are made in industrial and technological fields. As expressed by Major General Hugh Knerr at a recent interview, it may be assumed that in any future war, the major weight of its application will be necessarily provided through the efforts of the industrial and technical might of the country, rather than the military itself. Further, in practicing the principles used successfully by business concerns the world over, it is necessary that each individual be shown the effect of his efforts in tightening the bolt, rather than to inveigle him into believing he is a member of an organization which has an entirely different mission.

Professor Arnold Joseph Toynbee, in his book *A Study of History*, states that:

> The theory of history is a dialectic, that is, it reports the challenge of something by an exterior force. If the response to the initial challenge is successful, the process involves new challenges, with new responses. If the last responses are not successful, the community breaks down.

He states further that in the study of history, events and cycles are repeated in somewhat similar forms, regardless of the civilization being considered:

> At first, the community is led by a creative minority. The masses, stimulated by the common challenge that has called the society into being, and by the creative leadership that has guided its response, follow without undue questioning. Response to a challenge, however, calls forth a further challenge.

Thus, the challenge of overpopulation on a weak soil, to which the Athenians responded by taking to the sea as a maritime empire, called forth a new challenge as a result of Athens' new relation between its ships and the sovereign community of Sparta.

The United States seems to be now facing a nation which apparently is trying to respond to such a concept of world domination. Herein we have a dominant minority, ruling by force. A time of trouble ensues — a time of internal struggle and foreign wars, which more and more take the form of world conflicts. This period can be terminated only when the dominant minority, among its distracted fellows, delivers a crushing blow to all its rivals and becomes the "universal state." Rome, having crushed Carthage and Macedonia, thus became the universal state of Hellenic civilization. It has happened before, in the seemingly endless cycle of history.

If we apply such a formula to modern times, an interesting picture presents itself. The Air Force, having succeeded the navy as a first line of defense, faces now this, challenge, and its response to the summons will, in all probability, set the pattern of civilization for many generations to come. The Air Force has made a successful reply to World War II in itself, but this cannot presuppose success in answer to the next bid for power. On the contrary, one

success tends to make the responder more self-satisfied. He comes to believe that the previously given solution is surely the successful answer to the next arising problem. The elasticity of thought and effort, essential in such a response, may be lost. The forms, concept, organization and policy in which the successful reply has been made, tend to freeze and to impose themselves upon the solution of the latest question of tactics, strategy and overall need for new ideas, for which they are wholly unsuited.

With this nation putting its trust and faith in the armed forces, particularly the Air Force, failure in proper response cannot be risked. It must be realized that the operations of an air force can no longer be considered as being local in extent, or limited in range. Bombers, with their present capability of ranging the world, must have the necessary facilities, such as well-equipped bases, meteorological information, communications, and other items of logistic importance, always including radar. There must be developed, in addition, the most effective tactics and techniques, through sound organization, in order that these may be properly applied.

An attempt has been made in this article to show the specific and urgent need for immediately considering the separation of operational and logistic functions. This country should plan and build its Air Force with full knowledge that the methods of waging war are changing at a rate never equalled in history. It is believed that the separation of the fighting units from the service elements will give this country a sound basis with which to meet any of the eventualities.

There should be nothing startling about the proposed solution. Navies throughout the world have used just such a system with

fantastic success. It can be as successfully applied to the vast oceans above the ground.

Finally, since it has been seen that the other two remaining great powers of the earth, Britain and Russia, have already in effect such a system, it would appear that, for such a reason alone, serious consideration should be given to the idea. Judging from the evidence at hand, a fair tryout of the proposed solution could do little harm, and should benefit the armed forces to a great extent.

Closely connected with the growth of air transportation is the new cooperation which has sprung up between religious groups in a drive toward common goals. The Air Age promises much, in fact, in the whole broad field of human relationships. The peoples of the world will intermingle more freely; each will come to appreciate the problems and aspirations of the other. Such appreciation cannot fail to lessen and eventually to erase the national and racial suspicions and prejudices, always a prime factor underlying turmoil and conflict.

W. Stuart Symington in *Air Affairs*

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